UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,572	06/18/2001	Reto Naef	4-30754A	2901

1095 7590 06/18/2002

THOMAS HOXIE
NOVARTIS CORPORATION
PATENT AND TRADEMARK DEPT
564 MORRIS AVENUE
SUMMIT, NJ 079011027

EXAMINER
HAGHIGHATIAN, MINA

ART UNIT	PAPER NUMBER
1616	

DATE MAILED: 06/18/2002 10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/883,572	Applicant(s) NAEF, RETO	
	Examiner Mina Haghighatian	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 21-24, 26-27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sui et al 6,077,841.

Sui teaches substituted 5-heterocyclyl pyrazolopyrimidinones and derivatives thereof, their synthesis and their use in treating sexual dysfunction in mammals, especially male erectile dysfunction. The phosphodiesterase V (PDEV) inhibitor, Sildenafil, 5-[2-ethoxy-5-(4-methylpiperazin-1-ylsulphonyl)phenyl]-1-methyl-3-n-prpyl-6,7-dihydro-1H-pyazolo[4,3-d]pyrimidine-7-one, and a number of related analogues and their use are described in previous publications as well as in this patent. To date, at least nine families of mammalian PDEs have been described, five of which are capable of hydrolyzing the active, cGMP, to the inactive, GMP, under physiological conditions (PDE's I,II,V,VI and IX). PDE V is the predominant isoform in human corpus cavernosum. Inhibitors of PDEV, therefore, would be expected to increase the concentration of cGMP in the corpus cavernosum and enhance the duration and frequency of penile erection (col. 1, lines 14-18, 60-66; col. 2, lines 37-51).

Sui also teaches the methods of treating sexual dysfunction, especially male erectile dysfunction, and/or impotence in a subject in need thereof comprising administering to the subject a therapeutically effective amount of any of the compounds

or pharmaceutical compositions described. Also a process for making a pharmaceutical composition comprising any of the compounds and a pharmaceutically acceptable carrier (col. 5, lines 49-63).

Sui discloses that some of the compounds may form solvates with water (i.e, hydrates) or common organic solvents (col. 7, lines 55-59).

Sui discloses pharmaceutical compositions comprising one or more compounds of this invention in association with a pharmaceutically acceptable carrier. The preferred dosage forms are such as tablets, pills, capsules, powders, granules, parenteral solutions and suspensions, metered aerosol or liquid sprays, drops, ampules, autoinjector devices or administration by inhalation or insuffation (col. 9, lines 55-65).

Sui discloses the other derivatives and forms of the inhibitor of cGMP PDE and the method of making compositions in columns 14-30.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified the teachings of Sui et al on the compositions and methods of treating sexual dysfunction by selecting specific medicament and specific mode of administration.

Claims 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sui et al '841 in view of Purewal et al (5,225,183).

Sui was discussed above. Sui lacks specific teachings on the use of propellants.

Purewal teaches medicinal aerosol formulations. The suitable propellants are such as 1,1,1,2-tetrafluoroethane, n-butane, isobutane, pentane and isopentanes (col. 1, lines 58-66; col. 2, lines 14-30).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made given the general composition of Sui for treating sexual dysfunction through administration by inhalation of an inhibitor of cGMP PDE to a subject in need of such treatment, to have looked in the art for more specific parameters such as propellants because of the expectations of successfully preparing an effective aerosol or spray form of the said inhibitor.

Response to Arguments

Applicant's arguments filed 04/10/02 have been fully considered but they are not persuasive.

Applicant states that the examiner's requirement for spacing of the lines on good quality paper is not understood. However as applicant has corrected, the requirement was indicated to be the first paragraph of page 1, which was originally single spaced. The statement "on good quality paper" is a general information statement included with the double spaced lines, and was not stressed upon in the Office Action.

Applicant argues that Sui et al discloses specific PDE 5 inhibitors, i.e. substituted 5-heterocyclyl pyrazolopyrimidones, and also mentions inhalation as one of a number of

possible modes of administration. However, Sui clearly teaches cGMP inhibitors, especially, sildenafil, which is also claimed in all instant claims. Additionally the mere fact that Sui teaches other routes of administration for the formulation does not negate its teachings on the inhalation administration.

One of ordinary skill in the art can clearly be motivated to select a group of compounds and a specific form of administration from the choices taught by Sui in order to provide more options to health providers and patients and for its marketing purposes.

Applicant argues that Purewal is silent with regards to cGMP PDE 5 inhibitors. However Purewal was supportive evidence for teaching the use of propellants in medicinal aerosols and in combination with Sui et al, who discloses the use of cGMP PDE 5 inhibitors in inhalation forms, it renders the claims obvious to one of ordinary skill in the art.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mina Haghighatian whose telephone number is 703-308-6330. The examiner can normally be reached on core office hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jose Dees can be reached on 703-308-4628. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0198.

Mina Haghighatian
June 6, 2002

JOSE' G. DEES
SUPERVISORY PATENT EXAMINER
1616